Here is the component links!!!

Solar / batteries system:

[How to use INA219 DC Current Sensor Module with Arduino (how2electronics.com)](https://how2electronics.com/how-to-use-ina219-dc-current-sensor-module-with-arduino/)

Charge controller

<https://www.amazon.com/Victron-SmartSolar-Charge-Controller-Bluetooth/dp/B075NQQRPD/ref=sr_1_3?dib=eyJ2IjoiMSJ9.oFrsNWPn6E6YJi--k5Hg6LX_KXfH53SCXq3qG_dRMXNOAEzIbFu9LYLdW5vES5xJtRS7LOctUAipwAtA7CQMpLb74lH8e88YEVl6FP32vm9JCfazRYm6jTFt2GLWqrUw69rzrbWFkYdityd4zYnmQIvKnTkIg9gr545aWbxflX2OjtUKGFAUdPD6rZEYbyB2nRT7bFF2lfoPYD2SdJ7lBpsCvsgX_H_GdBrh_B4CIbQ.yGM2tIq4tpUomscsox4-i6H6aLoqhGRPtRqMDyoSE6k&dib_tag=se&keywords=12v+mppt+solar+charge+controller&qid=1724777020&sr=8-3>

<https://spheralsolar.com/mppt-vs-pwm/>

What kind of wiring from the solar panels to the charge controller will be required? Conductors? Ampacity? Same for battery to the inverter, inverter to the light bulbs, microcontroller, etc.

Inverter:

[CD4047BC Datasheet by ON Semiconductor | Digi-Key Electronics (digikey.com)](https://www.digikey.com/htmldatasheets/production/534599/0/0/1/cd4047bc.html?utm_adgroup=Semiconductor%20Modules&utm_source=bing&utm_medium=cpc&utm_campaign=Dynamic%20Search_EN_Product&utm_term=semiconductor&utm_content=Semiconductor%20Modules&utm_id=bi_cmp-420474294_adg-1304021153425016_ad-81501396862059_dat-2333301113239663:loc-190_dev-c_ext-_prd-&msclkid=3d55ec83a68017c3af528a4818a3f44c)

[Amazon.com : cd4047](https://www.amazon.com/s?k=cd4047&adgrpid=1345802797625374&hvadid=84112915581551&hvbmt=be&hvdev=c&hvlocphy=74419&hvnetw=o&hvqmt=e&hvtargid=kwd-84113022649194%3Aloc-190&hydadcr=12903_13399306&msclkid=9b5cba4d8e7310ae0e5adc863050df97&tag=mh0b-20&ref=pd_sl_1rkvtzlf_e)

IC/sensor system:

[Buy a Raspberry Pi 4 Model B – Raspberry Pi](https://www.raspberrypi.com/products/raspberry-pi-4-model-b/?variant=raspberry-pi-4-model-b-8gb)

[Buy a Raspberry Pi Camera Module 2 – Raspberry Pi](https://www.raspberrypi.com/products/camera-module-v2/)

[Amazon.com : esp32 cam](https://www.amazon.com/esp32-cam/s?k=esp32+cam)

[Hc-Sr501 Infrared Sensor for sale | eBay](https://www.ebay.co.uk/sch/i.html?_nkw=hc-sr501%20infrared%20sensor&norover=1&mkevt=1&mkrid=&mkcid=2&mkscid=102&keyword=hc-sr501%20infrared%20sensor&crlp=_&MT_ID=&geo_id=&rlsatarget=kwd-81020419291214&adpos=&device=c&mktype=&loc=74483&poi=&abcId=&cmpgn=398158572&sitelnk=&adgroupid=1296324441473153&network=o&matchtype=e&msclkid=a3e548c4038d10ba378e2e0fb47e2143)

[Arduino with RCWL-0516 Microwave Radar Proximity Sensor | Random Nerd Tutorials](https://randomnerdtutorials.com/arduino-rcwl-0516/)

App interphase:

Microcontroller runs webserver which provides connects with the app etc.